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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/722,706

11/25/2003

Peter J. Schubert

DP-308423

7484

22851 7590 01/23/2007

DELPHI TECHNOLOGIES, INC.

M/C 480-410-202

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EXAMINER

ARTHUR JEANGLAUD, GERTRUDE

ART UNIT

PAPER NUMBER

3661

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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2 MONTHS

01/23/2007

PAPER

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GROUP 3600

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/722,706  
Filing Date: November 25, 2003  
Appellant(s): SCHUBERT, PETER J.

Delphi Technologies, Inc  
For Appellant

**EXAMINER'S ANSWER**

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,192,305

Schiffmann

2-2001

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Schiffmann (U.S. Patent. 6,192,305).

As to claims 1, 18, Schiffmann discloses a roll angle estimation apparatus and method for predicting a future roll angle of a vehicle (See abstract), the apparatus comprising: an angular accelerometer (angular accelerations; see col. 13, lines 16-23) for sensing angular acceleration of a vehicle and producing an output signal indicative thereof (See Fig. 2B where signal is outputted from angular acceleration filters 112, 114; see col.12, lines 24-29); an integrator (110) as shown in Fig. 2A for integrating the sensed angular acceleration signal and producing an angular rate (See col. 7, lines 53-67); and a predictor for predicting a future roll angle of the vehicle as a function of the sensed angular acceleration, the angular rate, and a current roll angle (See abstract).

As to claims 2, 11, 19, 26, Schiffmann discloses the current roll angle is determined by integrating the angular rate (See col. 7, lines 49-65).

As to claims 3, 12, Schiffmann discloses the predictor comprises a Taylor series-based predictor for predicting the future roll angle as a quadratic extrapolation (See col. 8, lines 9-67).

As to claims 4, 13, 23, 30, Schiffmann discloses the angular accelerometer senses roll angular acceleration about a longitudinal axis of the vehicle, and the predictor predicts the future roll angle about the longitudinal axis (See col. 2, lines 37-53; col. 6, lines 3-11; col. 13, lines 16-23).

As to claims 5, 14, Schiffmann discloses the integrator and predictor are performed by a controller (MCU) (See col. 4, lines 48-64).

As to claim 6, Schiffmann discloses the controller further compares the predicted future roll angle to a threshold value and predicts an anticipated vehicle overturn condition based on the comparison (See col. 2, lines 14-25).

As to claims 7, 15, 24, 31, Schiffmann discloses the predictor performs a quadratic as a extrapolation (See col. 8, lines 10-67).

As to claims 8, 16, 21, 28, Schiffmann discloses the integrator performs a numerical integration of the angular acceleration signal based on time steps that vary as a function of rate of change of the acceleration signal (See col. 7, lines 49-67-col. 8, lines 1-9; col. 12, lines 24-32).

As to claims 9, 17, 22, 29, Schiffmann discloses the integrator performs a numerical integration of the angular acceleration signal based on time steps that vary as a function of magnitude of the acceleration signal (See col. 10, lines 46-64).

As to claims 10, 25, Schiffmann discloses a rollover sensing apparatus for predicting an overturn condition for a vehicle, comprising : an angular accelerometer (See angular accelerations; see col. 13, lines 16-23) for sensing angular acceleration of a vehicle and producing an output signal indicative thereof (See Fig. 2B; where signal is outputted from angular acceleration filters 112, 114; see col.12, lines 24-29); an integrator (110) as shown in Fig. 2A for integrating the sensed angular acceleration signal and producing an angular rate (See col. 7, lines 53-67); a predictor for predicting a future roll angle, and a current roll angle (See abstract); a comparator (124)

for comparing the predicted future roll angle to a threshold value; and an output (50) for generating an output signal indicative of an anticipated vehicle overturn condition prediction based on the comparison (See col. 9, lines 21-34).

As to claims 20, 27, Schiffmann discloses the steps of comparing the predicted future roll angle to a threshold value; and generating a vehicle overturn condition signal based on the comparison (See col. 9, lines 21-34).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gertrude Arthur-Jeanglaude whose telephone number is (571) 272-6954. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**(10) Response to Argument**

Applicant's representative argues on page 3 of remark submitted 10/3/05 that each of the accelerometers employed in Schiffmann are linear accelerometers. The Schiffmann patent, which is assigned to the assignee of the present application, does not employ an angular accelerometer. And further argues that the Examiner may have confused the angular rate sensors of Schiffmann with the linear accelerometers when in fact, the Schiffmann patent does not employ an angular accelerometer.

Examiner respectfully disagrees because the reference Schiffmann discloses an angular acceleration as stated in the office action above. The function of the angular accelerometer as stated in the claim 1, is to sense angular acceleration and to produce an output signal. It is shown in col. 12 and col. 13 that Schiffmann discloses angular acceleration. Therefore it is known to Schiffmann to employ an angular accelerometer to sense angular acceleration. Schiffmann discloses a pitch angle in Fig. 2 and an integrator 108 for integrating sensed angular acceleration signal and producing an angular rate (See col. 13, lines 16-23). All limitations of the claims are met by Schiffmann. Therefore, the rejection is maintained.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Gertrude Arthur-Jeanglaude *GAJ*

Conferees:

Thomas G. Black (SPE) *TGB*

Yonel Beaulieu (Primary Examiner) *YB*